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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,514	04/03/2006	Yoshinobu Ito	46884-5469	6978

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EXAMINER	
RALEIGH, DONALD L	

ART UNIT	PAPER NUMBER
2879	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,514	ITO ET AL.	
	Examiner	Art Unit	
	DONALD L. RALEIGH	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/03/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimazu et al (US Patent No. 4,611,143) in view of Derra et al (WO/2004/051698). US Patent No. 7,397,190 was used as the English translation of the text).

Regarding Claim 1,Shimazu discloses in Figure 6, a gas discharge tube (abstract, line 2) comprising: a sealed vessel (11)(Column 3, line 42) in which gas is encapsulated (Column 3, lines 43-45); a cathode section(14)(Column 3, line 51) arranged in said sealed vessel (11); an anode section (15), arranged in said sealed vessel, for generating discharge between said anode section and said cathode section; and a discharge path restricting section (18)(Column 3, line 50), arranged in said sealed vessel (11), for narrowing a discharge path between said cathode section and said anode section (see Figure 6), wherein said anode section (15) has a first surface (front side) facing said discharge path restricting section, a second surface (back side)

opposing said first surface (see Figure 6) and an opening portion (17) for communicating between said first surface and said second surface.

Shimazu fails to disclose an anode opening portion having a non-circular shape.

Derra teaches a gas discharge tube (title) with an anode opening portion (4) having a non-circular shape (Column 5, lines 17-20, (stripes or checkerboard)) to provide a common point of intersection lying on the axis of symmetry of the anode opening (abstract, lines 6-7)).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the striped or checkerboard opening portion of the anode, as taught by Derra, in the gas discharge tube of Shimazu, to provide a common point of intersection lying on the axis of symmetry of the anode opening.

Regarding Claim 2, Shimazu fails to disclose a gas discharge tube wherein the cross section of said opening portion has a non-circular shape where the maximum opening width in a first direction is different from that in a second direction orthogonal to the first direction.

Derra teaches a gas discharge tube (title) with an anode opening portion (4) having a non-circular shape where the maximum opening width in a first direction is different from that in a second direction orthogonal to the first direction (Column 5, lines 17-20, (stripes or checkerboard, the stripes would have a different width in the two directions)) to provide a common point of intersection lying on the axis of symmetry of the anode opening (abstract, lines 6-7)).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the striped opening portion of the anode, as taught

by Derra, in the gas discharge tube of Shimazu, to provide a common point of intersection lying on the axis of symmetry of the anode opening.

Regarding Claim 3, Shimazu fails to disclose a gas discharge tube wherein the cross section of said opening portion has one of an elliptic shape, an oblong shape and a rectangular shape.

Derra teaches an anode opening portion (4) having a rectangular shape (Column 5, lines 17-20, (stripes or checkerboard, the stripes or the checkerboard would include rectangles) to provide a common point of intersection lying on the axis of symmetry of the anode opening (abstract, lines 6-7)).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the striped or checkerboard opening portion of the anode, as taught by Derra, in the gas discharge tube of Shimazu, to provide a common point of intersection lying on the axis of symmetry of the anode opening.

Regarding Claim 4, Shimazu fails to exemplify a gas discharge tube wherein the opening width of a part of said opening portion is adjusted by a projection extending along the reference plane from an edge part of said anode section defining said opening portion.

Derra teaches, at least in Figure 3, a gas discharge tube (title) wherein the opening width of a part of said opening portion (of the anode (1)) is adjusted by a projection extending along the reference plane from an edge part of said anode section defining said opening portion.(Figure 3 shows two projections angled down into the opening, adjusting the size of the opening, to provide a common point of intersection lying on the axis of symmetry of the anode opening (abstract, lines 6-7)).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the adjusted opening portion of the anode, as taught by Derra, in the gas discharge tube of Shimazu, to provide a common point of intersection lying on the axis of symmetry of the anode opening.

Regarding Claim 5, Shimazu fails to exemplify a gas discharge tube wherein the maximum opening width in the second direction of the cross section of said opening portion is adjusted by a projection extending in the second direction from an edge part of said anode section defining said opening portion.

Derra teaches, at least in Figure 3, a gas discharge tube (title) wherein the maximum opening width in the second direction of the cross section of said opening (of the anode (1)) portion is adjusted by a projection extending in the second direction (The electrode projection has height and depth thus restricting the aperture size in both directions. Furthermore, (Column 5, lines 17-20, teaches that the hole can be a rectangle, further restricting the opening in two directions) from an edge part of said anode section defining said opening portion.

Figure 3 shows two projections angled down from the edge part of the anode into the opening, adjusting and defining the size of the opening, to provide a common point of intersection lying on the axis of symmetry of the anode opening (abstract, lines 6-7).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the adjusted opening portion of the anode defined by the projection, as taught by Derra, in the gas discharge tube of Shimazu, to provide a common point of intersection lying on the axis of symmetry of the anode opening.

Regarding Claim 6, Shimazu discloses in Figure 6, a gas discharge tube (11) wherein said anode section (15) is arranged such that said first surface is parallel to a tube axial direction of said sealed vessel (11) so as to emit light in a direction orthogonal to the tube axial direction of said sealed vessel (this is shown in Figure 6).

Regarding Claim 7, Shimazu discloses in Figure 6, a light source apparatus (abstract, line 1) comprising: a gas discharge tube (11); and a visible light source (16)(Tungsten lamp) for emitting visible light (Column 4, line 35) toward said opening portion of said anode section (see Figure 6) constituting a part of said gas discharge tube (11).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimazu (143) in view of Miyashita et al (US Patent No. 4,622,485).

Regarding Claim 8, Shimazu fails to disclose a liquid chromatograph including a light source apparatus. However, Shimazu discloses a deuterium lamp (Column 1, line 56) and Miyashita teaches that deuterium lamps are conventionally used in a liquid chromatograph (Column 1, lines 10-13) to provide a source of ultraviolet light.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate the deuterium lamp of Shimazu in a liquid chromatograph, as taught by Miyashita, to provide a source of ultraviolet light.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONALD L. RALEIGH whose telephone number is

(571)270-3407. The examiner can normally be reached on Monday-Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Donald L Raleigh/
Examiner, Art Unit 2879

/Mariceli Santiago/
Primary Examiner, Art Unit 2879